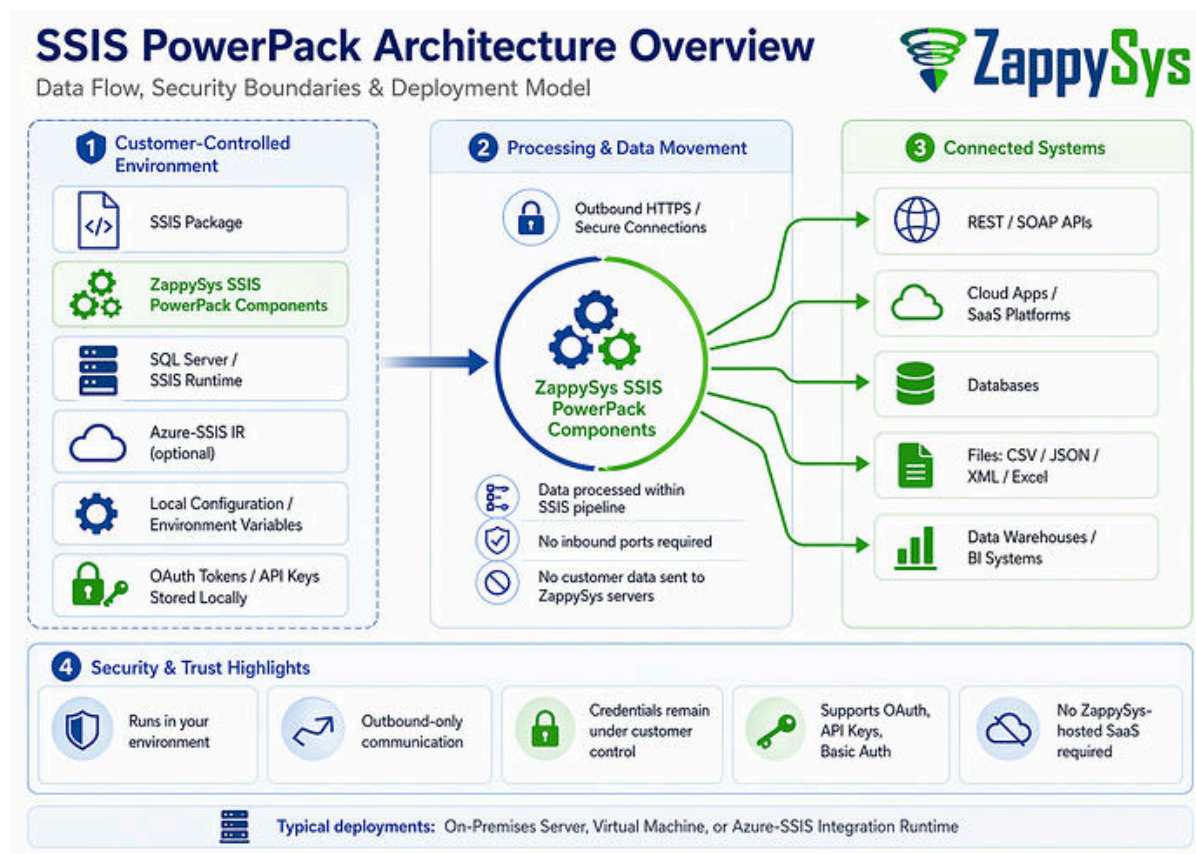


ZappySys Architecture Overview (SSIS PowerPack & ODBC PowerPack)

This document provides a high-level architecture overview of **ZappySys SSIS PowerPack** and **ODBC PowerPack**, focusing on **data flow, security boundaries, and deployment model** for compliance and security review purposes.

SSIS PowerPack Architecture



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Key Components

- **SSIS Package (SQL Server Integration Services)**
Runs inside your environment (on-premises VM or Azure-SSIS IR).
- **ZappySys SSIS PowerPack Components**
Includes connectors for REST APIs, JSON/XML, cloud apps, and databases.
- **Secure Credential Handling**
 - Credentials stored in SSIS configurations / environment variables
 - OAuth tokens stored locally within the execution environment
 - No credential storage on ZappySys servers
- **External Systems**
 - Cloud APIs (REST / SOAP)
 - SaaS platforms (e.g., CRM, Helpdesk, Marketing tools)
 - Databases (SQL Server, Oracle, etc.)
 - Files (CSV, JSON, XML, Excel)

Data Flow Summary

1. SSIS package executes inside customer-controlled environment
2. ZappySys connectors make outbound API/database calls
3. Data is processed in-memory within SSIS pipeline
4. Data is written to destination systems (DB, file, warehouse)

Security Notes

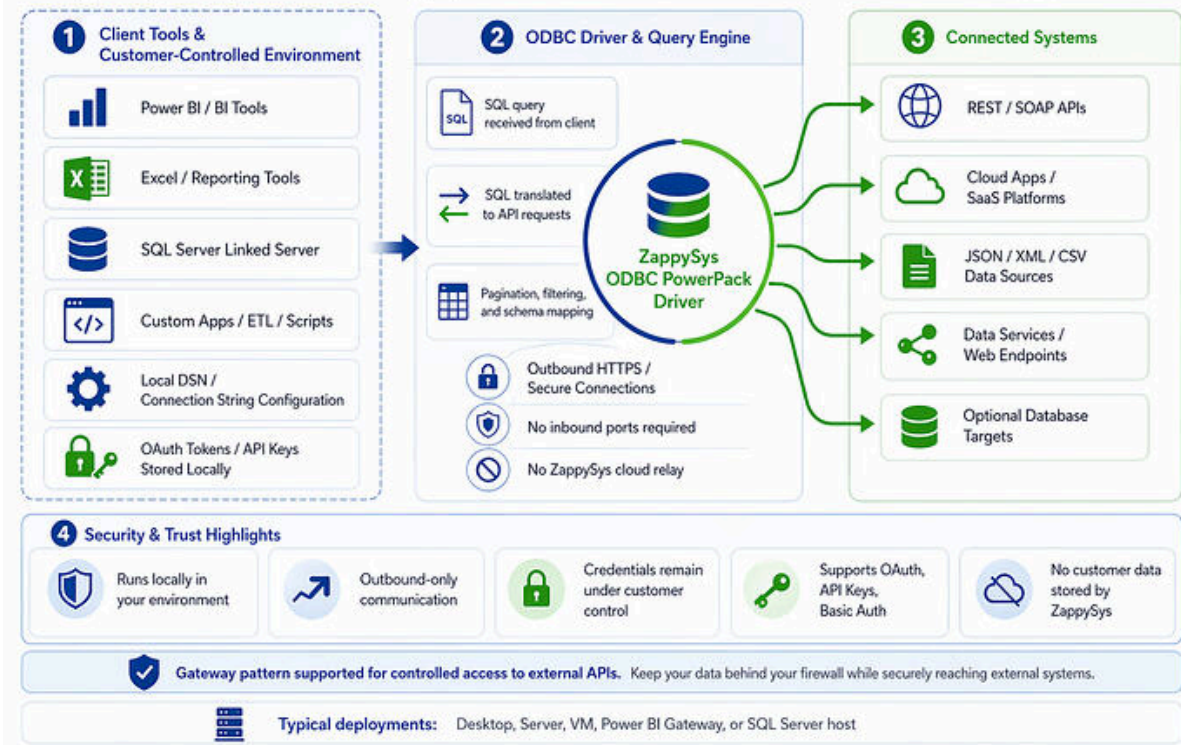
- No inbound connections required
- All communication is outbound (HTTPS)
- Data stays within customer-controlled infrastructure
- Supports secure token-based authentication (OAuth, API keys, etc.)

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ODBC PowerPack Architecture

ODBC PowerPack Architecture Overview

Query Flow, Security Boundaries & Deployment Model



Key Components

- **ODBC Driver (ZappySys API Driver)**
Installed on client machine or server.
- **Client Applications**
 - Power BI (DirectQuery / Import)
 - Excel
 - SQL Server Linked Server
 - Any ODBC-compliant tool
- **ZappySys Query Engine**
 - Translates SQL queries into API requests
 - Handles pagination, filtering, joins (where supported)

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- REST APIs / SaaS platforms

- Cloud data services

Data Flow Summary

1. Client tool issues SQL query via ODBC
2. ZappySys driver translates SQL → API calls
3. Data fetched via HTTPS from external systems
4. Results streamed back to client tool

Security Notes

- Driver runs locally (no cloud dependency)
 - No data stored or persisted by ZappySys
 - All API calls are outbound over HTTPS
 - Credentials stored locally (DSN or connection string)
-

Data Gateway & Linked Server Security Overview

In some enterprise scenarios, a **Data Gateway pattern** is used to securely bridge internal systems with external APIs or cloud services. This is common when using:






- SQL Server **Linked Server (via ODBC Driver)**
- On-premise reporting tools (Power BI, Excel, SSRS)
- Restricted environments behind firewalls

How It Works

- The **ODBC Driver (ZappySys PowerPack)** is installed inside your secure network
- All API calls are executed **locally from within your environment**
- External systems are accessed via **outbound HTTPS only**

[Skip to main content](#) · external callbacks are required

Security Characteristics

-  Runs entirely **inside your network boundary**
-  **No data persistence** outside your system
-  **No middleware or cloud relay by ZappySys**
-  Works with existing **firewalls, proxies, and network controls**
-  Credentials remain **local (DSN / secure config / vault integration)**

Special Note (SQL Server Linked Server Stability)

When using ODBC drivers with SQL Server Linked Server, there are known stability considerations depending on driver configuration and environment.

We strongly recommend reviewing the following guide for best practices, fixes, and secure configuration:

 **Read More:**

<https://zappysys.com/blog/sql-server-linked-server-odbc-crash-fix/>

This guide covers:

- Common crash scenarios and root causes
- Secure and stable configuration patterns
- Best practices for production deployments

When to Use This Pattern

Use Data Gateway / Linked Server architecture when:

- Direct cloud connectivity is restricted
- You need **centralized access via SQL Server**
- Multiple users/tools must query external APIs through a controlled layer
- Security policies require **no direct client-to-API access**

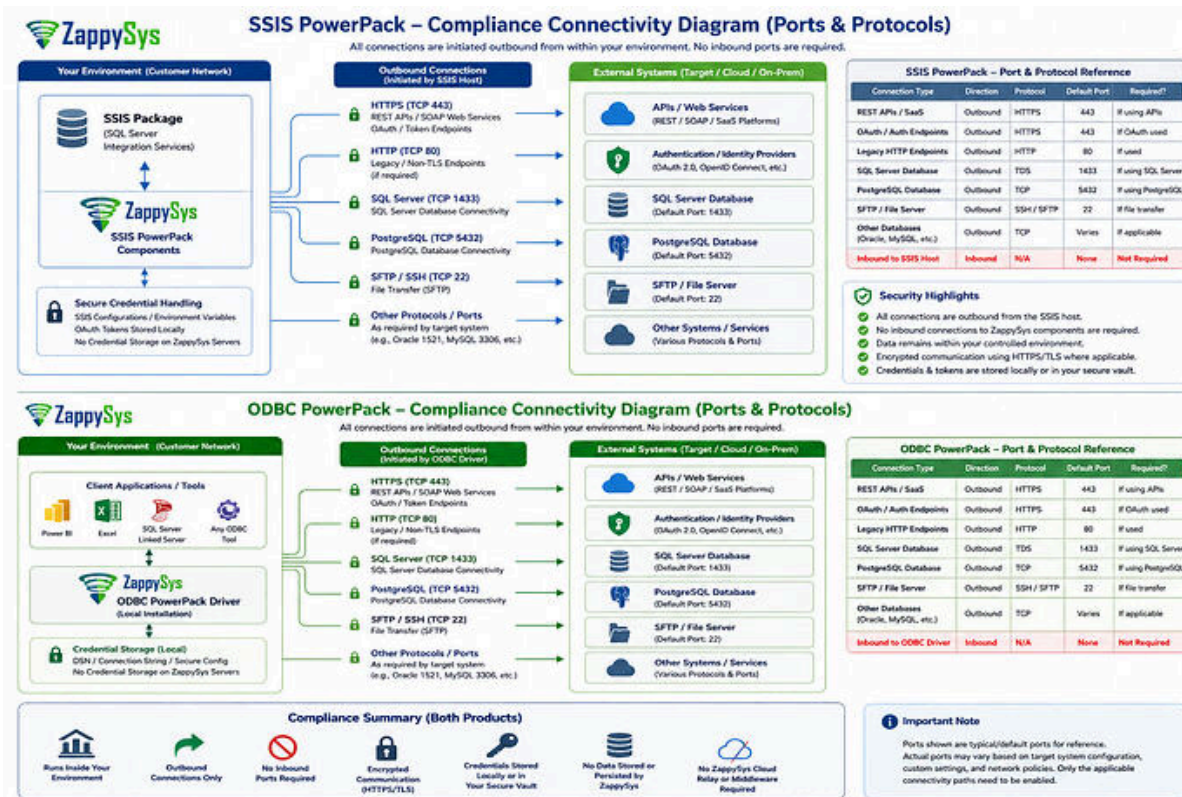
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Ports, Protocols & Compliance Connectivity Diagram

The diagram below provides a compliance-focused view of ZappySys connectivity for both **SSIS PowerPack** and **ODBC PowerPack**, including typical ports, protocols, traffic direction, and security boundaries.

This diagram is intended for network/security review and complements the high-level architecture diagrams above.

Important: ZappySys products are generic integration tools. Actual ports and protocols depend on the target system, authentication method, and customer environment. Only the applicable connectivity paths need to be enabled.



Key Connectivity Notes


- ZappySys components run inside the customer-controlled environment.

Skip to main content - Connections are initiated outbound from the customer environment.

- No inbound ports are required for ZappySys components.


- No ZappySys-hosted cloud relay or middleware is required.
- Credentials, API keys, and OAuth tokens remain stored locally or within the customer-controlled execution environment.
- Ports shown are typical/default ports for review purposes. Actual ports may vary based on the target system and customer configuration.

Typical Ports and Protocols

Connection Type	Direction	Protocol	Default Port	When Used 
REST APIs / SaaS endpoints	Outbound	HTTPS	443	API integrations
OAuth / Authentication endpoints	Outbound	HTTPS	443	OAuth authentication
Legacy HTTP endpoints	Outbound	HTTP	80	Only if non-TLS endpoint is used
SQL Server database	Outbound	TDS / SQL Server	1433	SQL Server database connectivity
PostgreSQL database	Outbound	TCP / PostgreSQL	5432	PostgreSQL database connectivity
SFTP / File server	Outbound	SSH / SFTP	22	File-based exchange
Other databases / services	Outbound	Target-specific	Varies	Oracle, MySQL, custom services, etc.
Inbound to ZappySys host	Inbound	N/A	None	Not required

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Compliance Summary

Area	SSIS PowerPack	ODBC PowerPack 
Execution location	Customer-controlled SSIS host	Customer-controlled client/server host
Connection direction	Outbound only	Outbound only
Inbound ports required	None	None
Common API protocol	HTTPS	HTTPS
Common API port	TCP 443	TCP 443
Database ports	Target-system native port	Target-system native port
Credential storage	Local/customer-controlled environment	Local DSN / connection string / customer-controlled environment
ZappySys cloud relay required	No	No

Compliance note: Typical/default ports are shown for review purposes. Actual ports may vary based on the customer's network configuration, target system configuration, and integration pattern.

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